AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A process for evaluating donor bone suitable for implant preparation comprising:

a. non-destructively assessing and imaging a donor bone, prior to implantation, using a three-dimensional imaging scan at one or more sites of the bone;

b. measuring parameters of the donor bone from the scan image, wherein the measured parameters include measurements chosen from a group consisting of bone volume, bone density, mineral density, and size and position of a canal; and

c. assessing the donor bone's suitability for fabrication into a given implant configuration based on the measured parameters.

2. (Previously Presented) The process of Claim 1 wherein the donor bone is registered or oriented in space before cutting.

3. (Previously Presented) The process of Claim 1 wherein the implant configuration is marked on the donor bone.

4. (Previously Presented) The process of Claim 1, and further comprising: formulating an implant cutting plan after assessing the donor bone's suitability for fabrication into a given implant configuration based on the measured parameters.

5. (Previously Presented) The process of Claim 4 wherein the donor bone is cut into implants based on the implant cutting plan.

6. (Previously Presented) The process of Claim 4 where the cutting plan is formulated from a computer based model.

7. (Original) The process of Claim 6 where the model is scalable.

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8. (Previously Presented) The process of Claim 5 wherein the donor bone is cut manually.

9. (Previously Presented) The process of Claim 5 wherein the donor bone is cut by an automated device.

10. (Original) The process of Claim 1 wherein the imaging step comprises scanning by computed tomography.

11. (Original) The process of Claim 1 wherein the imaging step comprises scanning by peripheral computed tomography.

12. (Original) The process of Claim 1 wherein the imaging step comprises scanning by magnetic resonance imaging.

13. (Original) The process of Claim 1 wherein the imaging step comprises scanning by gamma-ray computed tomography.

14. (Currently Amended) A process for evaluating donor bone suitability for implant preparation, comprising:
    a. non-destructively assessing and imaging the donor bone, prior to implantation, using three-dimensional image scanning at one or more sites on the donor bone;
    b. extrapolating from morphometric measurements to dimensions at another skeletal site on the same or another bone:
    c. determining the donor bone's suitability for implant geometries.

15. (Previously Presented) The process of Claim 14, and further comprising: marking an implant configuration on the donor bone.

16. (Previously Presented) The process of Claim 14, and further comprising: formulating an implant cutting plan after assessing the donor bone's suitability for implant geometrics.

17. (Previously Presented) The process of Claim 15 wherein the donor bone is cut into implants based on the implant configuration.

18. (Previously Presented) The process of Claim 17 wherein the donor bone is cut manually.

19. (Previously Presented) The process of Claim 17 wherein the donor bone is cut by a computer assisted device.

20. (Original) The process of Claim 14 wherein the imaging step comprises producing the image by computed tomography.

21. (Original) The process of Claim 14 wherein the imaging step comprises producing the image by peripheral computed tomography.

22. (Original) The process of Claim 14 wherein the imaging step comprises producing the image by magnetic resonance imaging.

23. (Original) The process of Claim 14 wherein the imaging step comprises producing the image by gamma-ray computed tomography.

24. (Previously Presented) A process for evaluating donor bone suitability for implant preparation comprising non-destructively assessing cortical thickness at one or more pre-selected sites of the donor bone, prior to implantation, and storing or writing the assessed cortical thickness in computer memory.

25. (Previously Presented) The process of Claim 24 including measuring the donor bone to within +/- 0.005mm accuracy.

26. (Previously Presented) The process of Claim 24 including measuring the donor bone to within +/- 0.01mm accuracy.

27. (Previously Presented) The process of Claim 24 including measuring the donor bone to within +/- 0.1mm accuracy.

28. (Previously Presented) The process of Claim 24 including measuring the donor bone to within +/- 0.5mm accuracy.

29. (Previously Presented) The Process of Claim 24 including measuring the donor bone to within +/- 1.0mm accuracy.

30. (Original) The process of Claim 1 wherein said process is employed as a method for determining critical attributes of bone related to predetermined release specifications for the bone for either processing or final product specifications.

31. (Original) The process of Claim 14 wherein said process is employed as a method for determining critical attributes of bone related to predetermined release specifications for the bone for either processing or final product specifications.

32. (Currently Amended) A method of formulating a bone implant cutting plan, comprising:

non-destructively assessing the three-dimensional morphometric measurements of a donor bone, prior to implantation, whereby said measurements specify data regarding the fabrication of a given implant configuration for the donor bone based on said measurements;

wherein said cutting plan identifies cutting locations on said donor bone, and said cutting plan is stored in computer memory or used to generate a work order.

33. (Original) The method of Claim 32 wherein said measurements are derived from a model selected from the group consisting of a mathematical model, a statistical model, a neural network model, and a computer model.

34. (Canceled)

35. (Original) The method of Claim 32 wherein said cutting plan identifies bone which may be processed to provide a subset of bone implants having one or more specified

dimensional, strength, or physical characteristics.

36. (Previously Presented) The method of Claim 32 wherein said cutting plan identifies dimensions and shapes which may be obtained from the donor bone having specified morphometric measurements.

37. (Currently Amended) A method for processing donor bone for implantation comprising:

a. non-destructively assessing and imaging a donor bone, prior to implantation, using a three-dimensional imaging scan at one or more sites of the bone;

b. measuring parameters of the donor bone from the scan image, wherein the measured parameters include measurements chosen from a group consisting of bone volume, bone density, mineral density, and size and position of a canal;

c. assessing the donor bone's suitability for fabrication into a given implant configuration based on the measured parameters;

d. formulating an implant cutting plan; and

e. cutting the donor bone into multiple implants based on the implant cutting plan.